Bore Hole Logs and Well Construction Drawings



لالما

JAMES C. ANDERSON ASSOCIATES INC. Drilling Contractor

907 Pleasant Valley Avenue Mount Laurel, New Jersey 08054 609) 722-6700

PROJECT: John	son Controls Ba	ttery Group,	Inc.					Sheet:	1 of 1
CLIENT: John	son Controls Ba	ttery Group,	Inc.					Job No. :	E94JCBG005
	ROUNDWATER			D	RILLI	NG METHOD	DEPTH	Borehole ID:	SMW-1
Date	Time	Depth		Hollow Stem Auger			23 feet	Date Started:	03/09/95
03/09/95	1025 hrs.	14.35						Date Finished:	
								Driller:	JCA
WELL CONSTRU	CTION	ROD S	IZE	s ⁻	TATE	PERMIT NO.	SPOON SIZE	Elevation:	
					-	03099	2 inches	Inspector:	Ron Dabravalskie
		SAMP							
Well Diagram	0	No. Depth	Blow	s 1	HNu		CLASSIFI	CATION	
	ij	0.21	100		•	Plack/ Pour Ma	dium Fina Silly Sand		
		0-2'	2-8-6	*	0	DIACK DIOWIL INC	dium-Fine Silty Sand		
		2-4'	5-6-5-	5	0	Yellow Silty Clay.	some Sand interspersed	t	
	5		100			2			
	!	4-6'	8-10-13	-14	0	Yellow Silty Sand	I and Clay perched water	r at 3.5'	
		6-8'	8-10-11	-11	0	YellowFine Sand	some Clay		
9.00							,		
	10	8-10'	7-10-11	-11	0	Yellow Fine- Med	lium Sand		
-11.00	_								
		10-12	6-7-7-	8	0	Reddish Yellow F	ine Sand some mottling	present	
-13.00	_			j					
-14.35 ¥ H		12-14'	4-5-6-	5-7 0	0	Reddish Yellow Fine Sand with Silt slight moisture			
	15								
7		14-16'	4-4-4		0	Reddish Yellow S	Sand water at 14.35'		
			sank out	- 1					
	+	16-18'	of rod	4-4	0	Yellowish Brown	Medium- Fine Sand water	er saturation	
	20	40.00				Vollaurich Donum	Medium- Fine Sand trac	a farmus, mátarial	
		18-20'	1-2-3	•	0	Tellowish blown	Medium Pine Sand Vac	e lettous tilaterial	
	-	20-22"	1-2-1	.,	0	Reddish Brown F	ine Sand with Silt mottlin	na present	
-22,88	-		1	-,,,,,,,					
		22-24	2-3-3	4	0	Reddish Brown F	ine Sand with Silt set we	ell at 23'	
	25								
Legend		v	Vater Table	e Inform	nation				
2" PVC Casing		Depth to	o Groundw	rater: 1	14.35	feet			
2" PVC Screen .010	0 slot size		Depth of	Well: 2	22.88	feet			
00000110001									
Concrete/Bentonite	grout	Height of	Water Col	umn:	8,53	teet			
Bentonite seal		Amount of	water in ca	sing:	1.39	gallons			
Convol mark									
Gravel pack									



907 Pleasant Valley Avenue

JAMES C. ANDERSON ASSOCIATES INC. Drilling Contractor

Mount Laurel, New Jersey 08054 609) 722-6700 Johnson Controls Battery Group, Inc. PROJECT: Sheet: 2 of 2 CLIENT: Johnson Controls Battery Group, Inc. Job No. : E94JCBG005 GROUNDWATER DRILLING METHOD DEPTH Borehole ID: SMW-2 Date Time Depth Hollow Stem Auger 18 feet Date Started: 03/10/95 03/10/95 1315 hrs. 9.65 feet Date Finished: 03/10/95 Driller: JCA WELL CONSTRUCTION STATE PERMIT NO. **ROD SIZE** SPOON SIZE Elevation: 103100 2 inches Inspector: Ron Dabravalskie SAMPLE CLASSIFICATION Well Diagram HNu No. Depth 4-8-8-11 Reddish Yellow... Medium- Fine Sand with Silt 0-2 4.00 10-12-8-9 Yellowish Red... Fine- Medium Sand with Silt... trace ferrous materials 2-4' 5 6.00 4-6' 4-4-3-4 Strong Brown... Fine Sand with Silt -8.00 6-8' 4-4-3-3 Reddish Yellow... Fine Sand with Silt... trace ferrous deposits -9.65 Reddish Yellow... Fine Sand with Silt... trace ferrous deposits... water at 9.65' 8-10 10 4-4-4-3 Reddish Yellow... Fine Sand with Silt... ferrous deposits... water saturation 10-12 2-2-3-3 Reddish Yellow... Medium- Fine Sand with Silt... mottling present 12-14 3-3-2-4 15 14-16 5-9-9-8 Reddish Yellow... Medium- Coarse Sand with and some Gravels -18.05 16-18' 8-9-6-5 Reddish Yellow... Medium- Coarse Sand with some Clay 7-5-6-7 Reddish Yellow... High Plasticity Clay... set well at 18' 20 18-20' 25 Legend Water Table Information 2ª PVC Casing Depth to Groundwater: 9.65 feet 2" PVC Screen .010 slot size Depth of Well: 18.05 feet Concrete/Bentonite grout Height of Water Column: 8.40 feet Bentonite seal Amount of water in casing: 1.37 gallons Gravel pack



907 Pleasant Valley Avenue Mount Laurel, New Jersey 08054 609) 722-6700

PROJECT:	Johnson Con								Sheet:	3 of 3
CLIENT:	Johnson Con	trols Ba	ttery	Group,	Inc.	Job No. :	E94JCBG005			
	GROUNDW	ATER_				DRIL	LING METHOD	DEPTH	Borehole ID:	SMW-3
Date	Time			Depth		Holk	w Stem Auger	18 feet	Date Started:	03/13/95
03/13/95	0920 hr	s	11.35 feet						Date Finished:	03/13/95
			_						Driller:	JCA
WELL CON	STRUCTION		_	ROD SIZE		STA	E PERMIT NO.	SPOON SIZE	Elevation:	
							103101	' 2 inches	Inspector:	Ron Dabravalsk
Well Diag	ram	0	No. Depth Blows		SAMPLE	HN		CLASSIF	ICATION	
		T		Dopat						
		٦.			1	-				
		7								
-4 .00		7								
		5		0-5'	10-12-14	-10 0	Strong Brown	Medium Sand with Silt trace	e ferrous deposits	
-6.00										
						1				
-8.00						İ				
		10		5-10	4-6-7-	8 0	Reddish Brown	. Medium- Large Gravels t	race ferrous deposi	ts water at 11.35
-11.35 ▼		_				- 1	1			
		_								
		_								•
		4						•	•	
		15	-	10-15	8-8-8-	8 O	Yellowish Brown	Medium- Large Gravels	trace ferrous depo	sits
		_								
		-				- 1				
-18.50		-							**	
	1				ł			, , , , , , , , , , , , , , , , , , , ,		
			-	15-20	8-10-10	-12 0	Reddish Brown	. Medium Silty Sand Gray I	banding set well a	t 18'
•	•	-								
		-								
		\dashv								
•		٦,		1			1.			
		25	1	L	1			-		
<u>Legend</u>				X	Nater Tabl	e Informati	20			
2° PVC Casir	ng			Depth t	o Groundw	rater: 11	3 <u>5</u> feet			
2" PVC Scree	en .010 slot size	,			Depth of	Well: 18	50 feet			
Concrete/Ber	ntonite grout		1	Height of	Water Col	umn: Z	<u>15</u> feet			
Bentonite sea	3		A	mount of	water in ca	sing: 1	17 gallons			-
Gravel pack										



W

JAMES C. ANDERSON ASSOCIATES INC. **Drilling Contractor**

PROJECT:	Johnson C	ontrois Ba	attery Group,	inc.			·	Sheet:	4 of 4	
CLIENT:			attery Group,					Job No. :	E94JCBG005	
		ROUNDWATER			DRILL	ING METHOD	Borehole ID:	SMW-4		
Date	Tia	10	Dept	h	Hollo	w Stem Auger	24 feet	Date Started:	03/10/95	
03/10/95 0950 hrs		hrs.	12.60 feet					Date Finished:	03/10/95	
				,				Driller:	JCA	
WELL CONSTRUCTION			ROD SIZE		STAT	E PERMIT NO.	SPOON SIZE	Elevation:		
						103102	2 inches	Inspector:	Ron Dabravalskie	
Well Di	agram	0	No. Depth	SAMPLE	HNu	-	CLASSIF	CATION		
		1	0-2"	0-6-7-	7 0	6" of Asphalt Br	own Fine Silty Sand som	e Clay		
			2-4'	10-13-14	-15 0	Reddish Yellow!	Medium Sand			
		5								
		+-	4-6	6-9-7-0	5 0	Reddish Yellow I	Medium Sand			
• • •		4		500		Boddish Valley	Madium Sand		-	
-8.00		-	6-8'	5-8-8-	9 0	Reddish Yellow I	Medium Sand	-,		
-10.00		10	8-10"	6-7-5-	, 0	Reddish Yellow	Sand with Silt some dark	er mottling present		
		1,0		0,10						
-12.00			10-12	3-4-5-	5 0	Reddish Yellow	Sand with Silt mottling pr	esent		
-12.60 ▼										
			12-14'	2-2-3-	3 0	Strong Brown Sa	Strong Brown Sand with Silt mottling present water at 12.60			
		15								
		-	14-16	2-2-2-	3 0	Reddish Yellow S	Sand with Silt mottling pr	esent water satura	ation	
		4				L				
		+-	16-18'	4-7-7-	9 0	Reddish Yellow	Medium- Coarse Sand with	Sut 1" Dangs of 16	errous deposits at 1	
		20	18-20	2-2-4-	6 0	Reddish Yellow	Coarse- Medium Sand with	some 0.75* Gravel		
		1	10-20			20-21' Coarse G				
-21.70		1_	20-22	2-4-6-	4 0	21-22' Reddish \	rellow Medium- Fine Sar	nd with Silt		
			22-24	4-8-10-	12 0	Reddish Yellow	Sand with Silt 0.75 Grav	el interspersed se	t well at 24'	
		25		<u> </u>		<u> </u>				
Legend	-		1	Nater Table	Informatio	0				
2ª PVC Ca	sing		Depth t	o Groundwa	ater: <u>12.6</u>	Q feet				
2º PVC Sc	reen .010 slot si	ze		Depth of \	Nell: 21.7	Q feet				
Concrete/E	lentonite grout		Height of	Water Colu	ımn: 9.1	Q feet				
Bentonite s	eal		Amount of	water in ca	sing: <u>1.4</u>	g gallons		-		
Gravel pac	k									



 \cup

JAMES C. ANDERSON ASSOCIATES INC.

Drilling Contractor

907 Pleasant Valley Avenue Mount Laurel, New Jersey 08054 609) 722-6700

PROJECT: John:	son Controls (Battery	Group,	Inc.				Sheet:	5 of 5
CLIENT: John:	son Controls I	Battery	Group,	Inc.				Job No. :	E94JCBG005
GR	OUNDWATER				DRIL	ING METHOD	DEPTH	Borehole ID:	SMW-5
Date	Time		Depti	h	Hollo	w Stem Auger	23 feet	Date Started:	03/09/95
03/09/95 1455 hrs.			14.80 fe	eet				Date Finished:	03/09/95
								Driller:	JCA
WELL CONSTRUC	NOITS		ROD SI	ZE	STAT	E PERMIT NO.	SPOON SIZE	Elevation:	
						103103	2 inches	Inspector:	Ron Dabravalskie
Mall Diagram		-		SAMPLE	1				
Well Diagram		No.	Depth	Blow	s HNu	 	CLASSIF	CATION	
	4						.		
	+	-	0-2'	2-4-8-	11 0	Yellowish Brown	Clayey Sand		
	\dashv						0d	•	
	+-	1-	2-4'	7-11-12	-13 0	Reddish Brown F	me Sand		
	5	-	4.61	000		Raddish Vallaus	line Cond with Cit		
	-		4-6'	8-8-9-	10 0	Reddish Yellow	-ine Sand With Silt		
	-				-	Boddish Beause 5	Tan Cilby Cond Volloy Di	nek Benua atenakia	
-9.00	-	$\dagger \lnot$	6-8' 5-5-7-7		7 0	Reddish Brown P	ine Silty Sand Yellow- Bl	ack- brown streaking	g mottling presen
9.00	-		0.40	466	5 0	Boddish Bown 5	See Sibe Sand Vollow Bi	ack Roman atmakia	o oliobė — sulios
-11.00	10_	+-	8-10'	4-5-5-	-	Reddish Brown F	ine Silty Sand Yellow- Bl	ack- brown streakin	g slight motuling
-11.00	\dashv		40.40	255		Date Day		maka asas Disak	
12.00	+	1-	10-12	3-5-5-	6 0	Readish Brown F	ine Sand some White str	eaks some Black	spotting
-13.00		11			.			nada anni Blade	
-14.80 Y	+-	1	12-14'	4-5-4-	5 0	Reddish Brown F	Reddish Brown Fine Sand some White streaks some Black spotting moist		
	15	-	4440			Reddish Brown Fine- Medium Sand mottling present water at 14,80'			-1.4.4.000
	+	+	14-16'	2-3-4-	2 0	Reddish Brown F	ne- Medium Sand motion	ng present water	at 14.80
	\dashv		40 401	204		Doddiek Vollaus	Andium Cond. water natur	ation	
	-	1-	16-18'	2-2-4-	5 0	Reddish Yellow N	Medium Sand water satur	auon	
	20		10 20	117	.	Reddish Yellow N	Andium, Fine Sand		
		+-	18-20	1-1-2-	2 0	Reddish reliow N	nediditi- Fine Sand		
	-		20-22	3-3-5-	,	Reddish Yellow N	Andium- Fine Sand		
-22.80	+	+-	20-22	3-3-3-	7 0	redulan Tellow N	neuralite Fille Salid		
			22-24	7-8-7-	8 0	Reddish Yellow N	Aedium- Fine Sand		•
	25		-L-L7	1-0-1-			The Carlo		
		<u>.</u> .		4-4 -					
Legend		·	W	rater Table	Information	1			
2" PVC Casing			Depth to	Groundw	ater: <u>14.8</u> 6) feet			
2° PVC Screen .010	slot size			Depth of \	Well: 22.8) feet			
Concrete/Bentonite g	rout	F	leight of \	Nater Col	ımn: <u>8.0</u> 0) feet			
Bentonite seal		Am	nount of w	rater in ca:	sing: <u>1.3</u>	L gallons			
Gravel pack									
									

MAIL TO:

DEPARTMENT OF NATURAL RESOURCES
AND ENVIRONMENTAL CONTROL

W TER SUPPLY BRANCH

I ISION OF WATER RESOURCES P.O. BOX 1401

DOVER, DELAWARE 19903

APPLICATION FOR A PERMIT TO DRILL A MONITOR / OBSERVATION WELL

APPLICATION MUST BE SUBMITTED AND PERMIT RECEIVED BEFORE DRILLING IS STARTED. IF APPROVED, THIS APPLICATION CONSTITUTES A WELL PERMIT.

A COMPLETION REPORT MUST BE FILED WI THE WATER SUPPLY BRANCH WITHIN THIR (30) DAYS AFTER CONSTRUCTION OF THIS WELL FAILURE TO DO SO MAY RESULT IN

	LICENSE SUSPENSION,
PLEASE PRINT OR TYPE	LOCATION MAP - ROAD MAP DIRECTION OF WELL FROM TOWN JCHRCLE BOX)
GENERAL INFORMATION	TOWN (CIRCLE BOX)
- · · · · · · · · · · · · · · · · · · ·	Project County
	Name of Nearest Town
	Address of Project Site 701 (1) 11 11
Telephone Number 322 337 - 9275	Draw a sketch below showing location of well
Consulting Firm/Supervising Geologist (If Applicable)	in relation to roads and give distance from well
James C Holorison Armen / D. H. 11	site to nearest road junction.
Telephone Number / 1 3 3 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2	8 (150) I
Date of Application 17 1 12 1375	Tien
Estimated Construction Date Francy 25 1945	
·	MANUEL (65)
Monitoring Program: [] CERCLA	5
Hazardous Waste [] UST	Man &
[] Solid Waste [] On-Site Septic [] Land Treatment (Non-Hazardous) [] Observation	
[] Other (Specify)	1 = 5 TH
Site name/State Permit # (If applicable)	We
T. RG / 40	
Name of DNREC Contact Person (If any):	Smus! 175
Proposed Drilling Method: 11 11 11 11 11 11 11 11 11 11 11 11 11	5mm 5 8
j.	Purpose of monitoring/types of proposed analytes (ie: hydrocarbons
	priority pollutants, RCRA Appendix IX, etc.)
Approximate total depth	nedate it 112
Is this a replacement well? Yes No	
-	Expected frequency of sampling:
Cosing ton	~3*
G :	Please attach 5 copies (8.5" x 11") of a site map (scale no smaller than
	1" = 200') with proposed monitor well locations, and unit, field or are to be monitored clearly indicated. Include a north arrow, local land
Casing material PYC	marks, buildings, existing wells, and proposed Local ID numbers.
Tentative screen setting 15 (Top) to 35	Please note: Up to 10 wells may be applied for on a single form i
Tentative screen length Material	located on same property, and construction details are identical.
ength of Stickup:	List Local ID numbers below for each well:
	LOCAL ID # PERMIT # LOCAL ID # PERMIT #
Gravel pack interval from	SMU 1 10 7095
rype or casing coupling (threaded, trared, etc.)	Smid 2 10-100
Aquifer/Formation screened in:	SMV) 3 00 1/0/
	SMW 4 10:102 SMW 5 10:3103
I HEREBY AFFIRM THE INFORMATION I HAVE SUBMITTED	FOR OFFICIAL USE ONLY
IS ACCURATE AND CORRECT.	Modified Grid
1 a . William	Modified Grid Local ID Local ID Tax ID
	Laftille ATTACHE Double ANDITION
	DO NOT WRITE BELOW THIS LINE
PURSUA	INT TO PROVISIONS OF 7 DELAWARE CODE, CHAPTER 60, PERMISSION IS HEREBY GRANTED T
ALL CHI	RUCT AND USE A WELL AS DESCRIBED ABOVE AND SUBJECT TO THOSE CONDITIONS ATTACHE RRENT REGULATIONS GOVERNING WELL CONSTRUCTION AND WATER RESOURCE USE MUST B
Date Amount 42 1995 De FOLLOW	VED. APPLICANT MUST ALSO ADHERE TO ALL DTHER FEDERAL AND STATE REGULATIONS.
Received By	Stands of the st
	Signed:
Receipt No.	Permit Expires Report Filed Permit No. 11 15 15

STATE OF DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

WELL COMPLETION REPORT MUST BE RETURNED WITHIN 30 DAYS AFTER CONSTRUCTION DATE.

ئــا		·	
_	PLEASE PRINT OR TYPE	~	
7	PERMIT NO. 103099 LOCAL ID SAW 1	IS COMPLETED WELL LOCATED AS SHOW	n on
	Owner Johnson Controls bittery Group	APPLICATION FORM? YES NO[]
	Address 100 North Broad	IF NO, DESCRIBE LOCATION CHANGE OR	OTHER COMMENTS.
	City Michiletown State DE Zip 19709		
	Telephone Number 302-378-4885	<i>'</i>	
	Consulting Firm/Supervising Geologist (If applicable)		č.
	James C. Hiderson Assoc. / D. Hill		
	Telephone Number 609 -722-6700		
	Well Contractor - TENY & C. Aiklet Co. HSSCC.		
	Date of Completion $1/2/9.5$	•	•
$\overline{}$	Name of DNREC Contact Person Alex Kitthery		•
	Drilling Method Hollow Steen Avjer		
	Drilling Method Treatment Street	·	
	WELL CONSTRUCTION		
	WELL CONSTRUCTION		-
	Total depth drilled: 63.6	DRILLERS LOG DESCRIP. TOP OF STR	ATA I BOTTOM
-	Depth to water 15	FIXE/FIXED TIEV O	21
	Surveyed Top of Casing Elevations	3132 N. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	
	Inner Outer Ft. above Sea Level	-304	·
			н,
	CASING SEQUENCE	Yallow : 1ty Clay 2'	
\Box	inner casing · Outer casing	Sit y by	6'
	Casing top	-ity iay 4'	<u> </u>
	Casing bottom 13'	-	10/
	Casing dotton	Fine to medium (c'	101
	Casing diameter	<u> </u>	
	Casing material SCREEN SEQUENCE		
		natistive 100 +inc 10'	16'
\Box	Inner casing Outer casing	sand'	
	Screen wp		
	Octeen cottom	* Hours brown 16'	20'
	Screen material	<u>-5017d</u>	
	Screen material	l	
		radiop pians 30'	23.6'
	Type of Grout Check the from O to 11	Fine sand	
[]	Gravel pack interval fromto		`
	Aquifer/Formation screened in:		
	Type of samples (ditch, split spoon, etc.)		
	spl.t spoor		
	1		
	Can Daharateka		
-	Samples Logged By: Ron Dabravalskie		
5	1		
	Scientist, James C. Anderson Assoc		
Ly	(Title) (Company)		
	Yama (1 A-1 1)		
	Well Drilled By: James C. Anderson Asicc.	"	
	(Company Nume)		
	100,000	SUPPLEMENTAL DRILLERS LOG ATTACH	IED?
	1 you 1 Calon 4.17-95	YES[] NO DA	
[_]	(Signature of Driller in Charge) (Date)	PAGE I OF PAGES	
	White Water Supply 2 Commendation 2 21 1 2	<u></u>	
	White - Water Supply . Canary - Other . Pink - Owner . Go	identod - Contractor DOCUI	MENT NO. 40-08/87/02/03 - EC 8

 \sqcup

STATE OF DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

WELL COMPLETION REPORT MUST BE RETURNED WITHIN 30 DAYS AFTER CONSTRUCTION DATE.

	•						
П	LEASE PRINT OR TYPE						
	PERMIT NO. 103100 LOCAL ID SMW 2	IS COMPLETED WELL LOCATED AS SHOWN ON					
<u></u>	Owner Jichiscia Controls Battery (-TOUD)	APPLICATION FORM? YES					
_	Address 700 North Broad	IF NO, DESCRIBE LOCATION C	hange or other	COMMENTS.			
	Tity Makle town State DE Zip 19709	,					
	Telephone Number 302 - 378 - 9885.						
	Consulting Firm/Supervising Geologist (If applicable)						
П	June S. C. Alek TSCIT Assoc. / D. Hill						
	Telephone Number 609 - 722 - 6700						
السا	Well Contractor JIMES C. Anderson Assoc.						
	Date of Completion113/9.5	·					
	Name of DNREC Contact Person Alt x Rittle ich						
	Drilling Method Holicas Stem Acget 0						
	WELL CONSTRUCTION			• ·			
	Total depth drilled: 18,5		_				
لسا	Depth to water	DRILLERS LOG DESCRIP. T	OP OF STRATA	BOTTOM			
	Surveyed Top of Casing Elevations	(Red in to tile	0'	4'			
	Ft. above Sea Level	redistryellowsdiki					
	Inner Outer			•			
		Brown fine SADd	. 4.	6'			
\Box	CASING SEQUENCE						
	Inner casing Outer casing	Keddish velicio	(c'	121			
	Casing top O	Fire Sand					
	Casing bottom						
П	Casing diameter 2"	reddish vellow	15,	141			
	Casing material PVC	meditation sand					
	SCREEN SEQUENCE						
\Box	Inner casing Outer casing	heddish vellaw	141	18			
	Screen top	med to charse sand					
\Box	Screen top Screen bottom			· ·			
_	Screen diameter 2"	reddish yellow	18'	18.5			
	Screen material PVC	Clay					
	'ype of Grout not he hat he from to to						
\Box	Gravel pack interval from 6 to 18.5			:			
	Aquifer/Formation screened in: Columbia						
	Type of samples (ditch, split spoon, etc.)						
	spirt spoor						
	1						
	Samples Logged By: KCO Datravalskie						
\Box							
1 }	Scentist, James C. Antoniana						
	(Title) (Company)						
	James Alleran According						
	Well Drilled By: Tones C. Arresson Assoc.			•			
	,pang manuay	,		•			
\Box	10 711	SUPPLEMENTAL DRILLERS LO	G ATTACHED?	·-			
	Cpric 1 Curin 4-17-95	YES[] NO[]					
	(Signature of Driller in Charge) (Date)	PAGE 1 OF PAGES					
	White - Water Supply & Canary Other & Bink Owner & Col						

STATE OF DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

WELL COMPLETION REPORT MUST BE RETURNED WITHIN 30 DAYS AFTER CONSTRUCTION DATE.

	PLEASE PRINT OR TYPE						
Π -	PERMIT NO. 103101 LOCAL ID SMW 3	IS COMPLETED WELL LOCATED AS SHOWN ON					
	Owner Johnson Countrels battery Grand	APPLICATION FORM? YES 🔀 NO[]					
	Address 700 North broad	IF NO, DESCRIBE LOCATION CHANGE OR OTHER CO	MMENTS.				
\Box	City Michile town State DE Zip 19709						
{ {	Telephone Number 302-378-4865						
	Consulting Firm/Supervising Geologist (If applicable)		T				
	James C Hirlerson Assoc.						
	Telephone Number 609 - 722 - 6700	٠					
	Well Contractor Dimes C. Aireson Assoc	•"					
	Date of Completion 1/4/9.5						
\bigcap	Name of DNREC Contact Person Alex Rittberg						
	Drilling Method Hellew stem Auger						
	3						
	WELL CONSTRUCTION						
	Total depth drilled: 18.5	PRILLEDG LOC DECCRIP TOD OF CEDATA TO	OTTOM				
لسما	Depth to water		H1				
	Surveyed Top of Casing Elevations		7/				
11	Inner Outer Ft. above Sea Level	Sand					
L		Endelish vellas 41	3'				
	CASING SEQUENCE	Fine Sand					
	Inner casing Outer casing	7:08 5000					
	Casing top	Recthists yellow 8'	(2'				
	Casing bottom	med to sine	10				
	Casing diameter	5000					
	Casing material	1—/RISC					
السا	SCREEN SEQUENCE	Reddish brown 16'	18.51				
	Inner casing Outer casing	med to sine					
	Screen top	Sand					
لسا	Screen bottom						
	Screen diameter						
	Screen material PVC						
	1 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1						
	Type of Grout Crick 12 Tring of trom to 18.5						
\bigcap	Gravel pack interval from 6 to 18-5						
	Aquifer/Formation screened in: Cotonbia						
	Type of samples (ditch, split spoon, etc.)						
	, - plit spoor						
	1		`				
لسة	Samples Logged By: ACI) Dabiavalskie						
	(Name)						
	Scientist, James C. Arckisch Assoc						
	(Title) (Company)						
	Y 0 0 1 0	• •					
	Well Drilled By: James C. Anderson Assoc.						
٠ سا	(Company name)						
	10 511	SUPPLEMENTAL DRILLERS LOG ATTACHED?					
	(Signature of Driller in Charge) (Date)	YES[] NO[X]					
	(Signature of Driller in Charge) (Date)	PAGE 1 OF PAGES					
_	White - Water Supply . Canary - Other . Pink - Owner . Go	Idenrod - Contractor DOCUMENT NO. 40-08/	87/02/03 - EC 81				

STATE OF DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

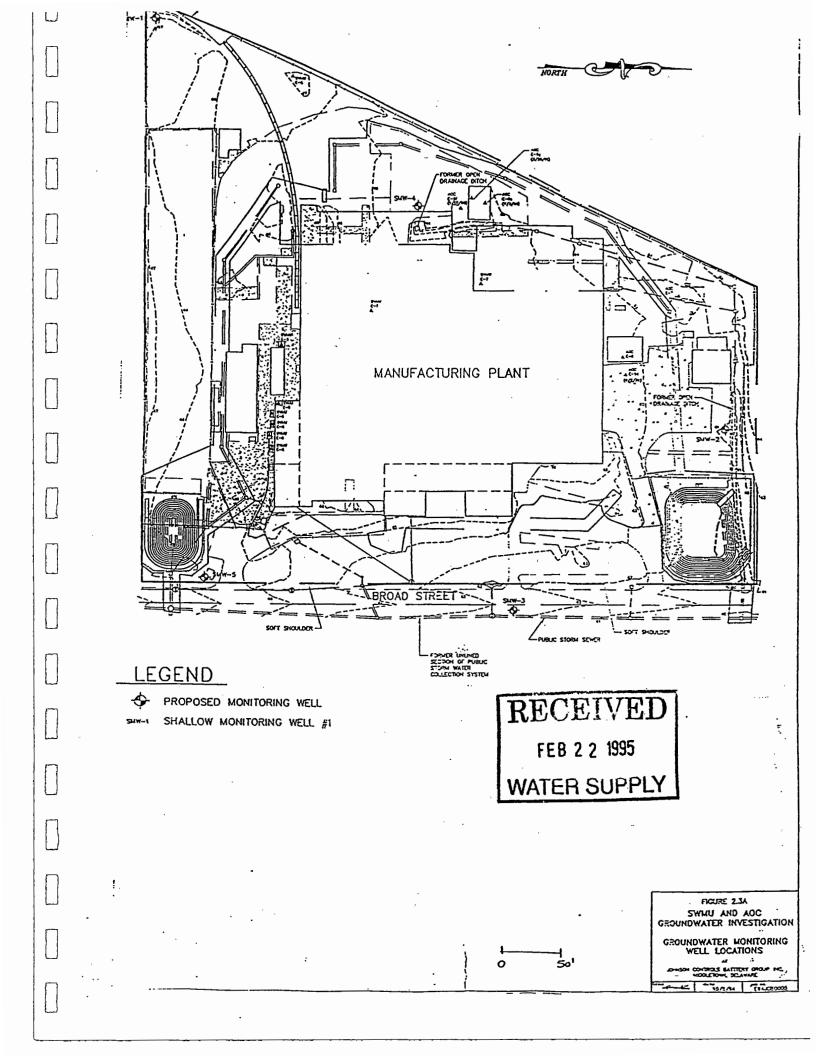
WELL COMPLETION REPORT MUST BE RETURNED WITHIN 30 DAYS AFTER CONSTRUCTION DATE.

	PLEASE PRINT OR TYPE		TRE A C CIVIOUNI ON	
	PERMIT NO. 103108 LOCAL ID SMW 5	IS COMPLETED WELL LOCAT		
	Owner JChison Controls Bittery Group		NO[]	
\Box	Address 700 North Broad	IF NO, DESCRIBE LOCATION	CHANGE OR OTHER	R COMMENTS.
	City McHIC+CLOT State DE Zip 19709	,		. "
	Telephone Number 302-378-9885			
	Consulting Firm/Supervising Geologist (If applicable)			-
	Jomes C. Anderson Assoc.			-
	Telephone Number (009 - 722 - (-700)			
	Well Contractor Times C. Anderson Assoc.			
\Box	Date of Completion			
	Name of DNREC Contact Person Alex Nithherry		,	
	Drilling Method TKII(W) Stern Aliger 0			
	WELL CONSTRUCTION		-	
	Total depth drilled:		mon on omnama	Dommos.
	Depth to water	DRILLERS LOG DESCRIP.	TOP OF STRATA	воттом
	Surveyed Top of Casing Elevations	provintine		21
	Inner Outer Ft. above Sea Level	silty sand		 -
1	Timer Outer			13/
$\overline{}$	CASING SEQUENCE	heldistyc ICW	2'	121
	Inner casing Outer casing	median sand		
	Casing top	promo sand with	15,	141
	Cashing bottom	Silty fines		
	Casing diameter PVC			
امسا		Kedlish yellow		_SQ
	SCREEN SEQUENCE	med. to dearse		
	Inner casing Outer casing	5004		
	Screen top			2251
	Screen bottom	heddish yellow	50,	22.5'
	Screen diameter	Sard, coarse	·	
	Screen material LPVC	gravel		
-	and a district protection beat of the 10'			
۲	Gravel pack interval from 10 to 22.5			
	Gravel pack interval from 10 to 25.5 Aquifer/Formation screened in: CAUNDIA			
L,	\		_ 	
	Type of samples (ditch, split spoon, etc.)			
П	- Split Specil			_ -
				
	Samples Logged By: Son Dabravalskie			
\Box	(Name)	·		
	Contint To a day a Air			·
	Scientist, James C. Anterson Assoc			
	(тте) . (сотрану)			
\bigcap	1			
	Well Drilled By: James C. Aixerson Assoc.			
	(Company Name)			
	,	CUDDI EMENTAL DDILLEDG	OC ATTACLIEDS	
	Vin K Value 4-17-95	SUPPLEMENTAL DRILLERS I	LOG ATTACHED?	
	(Signature of Driller in Charge) (Date)	YES[] NO[X] PAGE 1 OF PAGES	_	
-		FAGE 1 OFFAGES		
	White - Water Supply . Canary - Other . Pink - Owner . Go	ldenrod - Contractor	DOCUMENT NO	40-08/87/02/03 - EC 81

STATE OF DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

WELL COMPLETION REPORT MUST BE RETURNED WITHIN 30 DAYS AFTER CONSTRUCTION DATE.

	PLEASE PRINT OR TYPE						
	PERMIT NO. 103103 LOCAL ID SMW 5	IS COMPLETED WELL LOCATED AS SHOWN ON					
	Jowner Johnson Controls Buttery Croop	APPLICATION FORM? YES [NO[]					
	Address 700 North Acad	IF NO, DESCRIBE LOCATION CHANGE OR OTHER COMMENTS.					
~~	City Michletown State DE Zip 19709						
	Telephone Number 302-378-7865	,	·				
	Consulting Firm/Supervising Geologist (If applicable)		3.				
	Consulting Firm Supervising Geologist (It applicable)						
Γ		j	٠٠٠ د د د د د د د د د د د د د د د د د د				
	Telephone Number 609-722-6700	•					
	Well Contractor Toncs C. A. McToD A.scc						
	Date of Completion 1/2/45						
	Name of DNREC Contact Person Alex nittberg						
	Drilling Method Hillie Sten Aiger 0						
	1						
·	WELL CONSTRUCTION	_					
	Total depth drilled:						
	Depth to water15'	DRILLERS LOG DESCRIP. TOP OF STRATA	BOTTOM				
	Surveyed Top of Casing Elevations	Yellow brown Clayer O'	21				
	Ft. above Sea Level	Sand					
	Inner Outer	36010					
		South hir hir 2'	HI				
	CASING SEQUENCE						
\Box	. Inner casing Outer casing	Fine sand					
11	Casing top	Reddish herion H'	 -				
	Casing bottom						
	Casing diameter 2	Fire silty sand					
П	Casing material PyC						
	Outries interest to	Sortish yellar 16'	236				
	SCREEN SEQUENCE	medim's and					
	Inner casing Outer casing						
	Screen top						
	Screen bottom						
	Screen diameter	·					
\Box	Screen material PVC						
	1						
لسا	Type of Grout and it it it it is the literom O to II	- Print - Comment					
	Gravel pack interval from 111 to 23.6						
\bigcap	Aquifer/Formation screened in:						
	Type of samples (ditch, split spoon, etc.)						
	Split Y will						
							
11							
	Samples Logged By: NON Dabiavolskie	 					
	(Name)		·				
\Box	15 roles - Van (1) Aug - Aug						
1)	(Title) Xientist Jimes C. Aiderson Associ	· ——————					
ليا	i (zme) (company)						
		·					
	Well Drilled By: Lines C. Airerson Assoc.						
	(Company Name)						
	·						
	1 Jan Tr. Vilen 4-17-15	SUPPLEMENTAL DRILLERS LOG ATTACHED?					
		YES[] NO[X]					
	(Signature of Driller in Charge) (Date)	PAGE 1 OF PAGES					
	White - Water Supply . Canary - Other . Pink - Owner . Go	Identid - Contractor DOCUMENT NO	. 40-08/87/02/03 - EC 81				
	was supply - canaly-other - the -owner - Go	DOCUMENT NO	. 10 00/01/02/03 - EC 81				





907 Pleasant Valley Avenue Mount Laurel, New Jersey 08054 609) 722-6700

PROJECT: Johnson Controls Battery Group Sheet 1 of 3 CLIENT: Johnson Controls Battery Group Job No. : E94JCBG005 **GROUNDWATER** DRILLING METHOD DEPTH Borehole ID: HDP-1 Date Time Depth Hollow Stem Auger 14' Date Started: 05/14/96 05/14/96 12.3 Date Finished: 05/14/96 Driller: Unitech WELL CONSTRUCTION STATE PERMIT NO. / SPOON SIZE **ROD SIZE** Elevation: Approx. 45' above MSL NA Inspector: Kurt Martin SAMPLE Well Diagram No. Depth PID CLASSIFICATION Munsell NR Dark brown silty fine SAND 0-2 0 2-4' NR Brown silty CLAY Brown silty CLAY 4-6' NR 0 Orange-brown silty medium-coarse SAND NR 0 Red-brown fine-coarse SAND 6-8 Orange medium-coarse SAND, trace CLAY 8-10' NR 0 10-12 NR Orange medium-coarse SAND, trace CLAY, wet at tip (12') 12-14' NR Orange medium-coarse SAND, trace CLAY, saturated Temporary Hydropunch driven to 15' Static water level: 12.3 feet below grade

NA - Not Applicable
NR - Not Recorded



907 Pleasant Valley Avenue Mount Laurel, New Jersey 08054

609) 722-6700												
PROJECT:	Johnson (Contro	ols Ba	ittery	Group						Sheet	2 of 3
CLIENT:	Johnson (Contro	ols Ba	attery	/ Group						Job No. :	E94JCBG005
	GROUN	DWAT	ER				DRILLING METHOD DEPTH			DEPTH	Borehole ID:	HDP-2
Date	TI	me			Depti	h	Hollow Stem Auger			13'	Date Started:	05/14/96
05/14/96	12'		12'	,			,		Date Finished:	05/14/96		
											Driller:	Unitech
WELL CONSTRUCTION				ROD SIZE			ST	ATE	PERMIT NO. 🔃	SPOON SIZE	Elevation: App	rox. 45' above MSL
N	IA								NA .	2"	Inspector:	Kurt Martin
Well Diag	ram .			No. Depth Munsel		u Tı	PID		CLASS	SIFICATION		
					5-7'	NR			Orange brown med	fium-coarse SAND		
					7-9'	NR		0	Red/brown/black/o	range marbled medium	-coarse SAND	
					9-11'	NR		0	Orange medium-co	parse SAND		
		+			11-13'	NR		0	Orange medium-co	parse SAND, wet at 12		
		7		_			+					
		+	_						·			
		1	:			-		•				
		4							···-			
		1										
,		-										
		\exists										
		-										
		1										;
		+					+					,
NA - Not Applica							<u></u>				_	



ROJECT: Johnson Controls Battery Group										Sheet:	3 of 3
Johnson Controls Battery Group										Job No. :	E94JCBG005
	GROUNDWATER							NG METHOD	DEPTH	Borehole ID:	HDP-3
Date	Time			Depth			Hollow Stem Auger		13'	Date Started:	05/14/96
05/14/96				8.5'						Date Finished:	05/14/96
										Driller:	Unitech
WELL CONSTRUCTION NA				ROD SIZE			STATE PERMIT NO.		SPOON SIZE	Elevation: App	rox. 45' above MS
									2"	Inspector	Kurt Martin
Well Diagram			Ì	No.	Depth	Munsell	PID		CLASSI	FICATION	
		· -			5-7'	NR	0	Orange tan mediu			
		7			7-8.5	NR	0	Orange tan mediu	m-coarse SAND, wet at 8	3.5'	
		1			8.5-11'	NR	0	Brown CLAY and I	ine SAND		
					11-13'	NR	0	Brown silty fine SA	ND		
		1							· · · · · · · · · · · · · · · · · · ·		
		1									
		\exists		\dashv		·	-				
		+		\dashv							· ·
		7									
		1									
		1				in .				-	
		4									
egin deside		7				-			4		
		_	_				—				